

SCOPE OF WORK
AUGUST 2014
CONSTRUCTION MANAGEMENT, CONSTRUCTION INSPECTION &
MATERIALS TESTING SERVICES

Wadsworth Boulevard (SH 121) Highlands to 10th Avenue
Project: STU 1211-084, SA 19868

Services are requested to provide Construction Management, Construction Inspection and Materials Testing Services to support the referenced CDOT Project, as follows.

Wadsworth, Highland to 10th

Project STU 1211-084 (19868) will add an additional lane onto Wadsworth Blvd. from Highland Street (approximately 8th Avenue) to 10th Avenue in the County of Jefferson and City of Lakewood. The proposed lanes are 12 feet wide. The ultimate goal for the project is to improve safety, reduce access deficiencies, and improve traffic flow on Wadsworth Blvd.

Construction Services

The requested personnel staffing required for the construction management services for the project include: one (1) **Assistant Project Engineer** and three (3) **Inspectors** and one **(1) Materials Tester** to be utilized on the project. The consultant will also supply scheduling analysis and evaluation. General Requirements are outlined in **Section 1**.

The Assistant Project Engineer shall have sufficient education, training, and experience to meet the minimum qualification comparable to CDOT's Civil Engineer Project Manager I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Assistant Project Engineer's requirements are outlined in **Section 2**.

The Inspectors shall have sufficient education, training, and experience to meet the minimum qualification comparable to CDOT's Engineer/Physical Science Tech I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Inspector's requirements are outlined in **Section 3**.

The Consultant shall provide testing services for the project. This shall include a full-time, tester dedicated specifically to this project to perform testing in accordance with the CDOT Field Materials Manual and all other applicable testing standards. Testing requirements are outlined in **Section 4**.

The Consultant shall provide services, as requested by CDOT, to periodically review Contractor schedules and method statements for reasonability and compliance with contract requirements, as well as perform delay analysis on time requests. Schedule Analysis Requirements are outlined in **Section 5**.

Full time services are anticipated from approximately October 2014 through December 2015 (includes the duration of the construction, potential adjustments to construction contract time, plus pre and post construction activities as required). Work may be required at night and/or day, on weekends, holidays, and/or on a split-shift basis. Work weeks may be in excess of or less than the standard 40-hour week.

The Contract Administrator for this Task Order will be:

Kevin L. Ryburn, P.E.
Project Engineer
Region 1 West Program
425-B Corporate Circle Drive
Golden, CO 80401
720.497.6952

Active Day-to-Day administration of this contract will be delegated to the assigned Project Engineers/Project Managers as follows:

Kevin L. Ryburn, P.E.
Project Engineer
Region 1 West Program
425-B Corporate Circle Drive
Golden, CO 80401
720.497.6952

The following task requirements are not intended to be a definitive listing of every activity required by the Consultant for this project. Refer to the references listed in the **Project Standards** below for more detailed information.

All work shall be performed in accordance with the Basic Contract's Scope of Work (Exhibit A) as supplemented by these task requirements.

Section 1 - General Requirements

A. Project Standards

Construction management and Inspection shall be in accordance with the latest versions of the Colorado Department of Transportation's Construction Manual, Field Materials Manual, Colorado Department of Transportation Inspector's Checklist, Standard Specifications for Road & Bridge Construction, the Supplemental Specifications, if any, Standard and Project Special Provisions, applicable M & S standards, and the plans, permits, and other documents governing the construction of the project. All Consultant activities performed shall be as authorized by the Project Engineer. All Consultant personnel shall comply with CDOT's Safety, Sexual Harassment, Discrimination, and Workplace Violence Policies and Procedures. For the purposes of this document, Project Management and Inspection shall be known as "the work."

B. Labor, Materials, Vehicles & Equipment

The Consultant shall furnish their personnel, materials, equipment, and transportation required to perform the work. Consultant personnel shall have appropriate vehicles (equipped with flashing amber beacon), cellular phones, computers, and miscellaneous equipment and supplies (printers, calculators, manuals, office supplies, safety equipment, etc.) required to perform the work as approved by the CDOT Project Engineer. Field Office and Field Laboratory will be provided by CDOT.

The Consultant's work shall be under the direction of, and shall be reviewed by, a Professional Engineer, registered in the State of Colorado, or as appropriate by a Licensed Professional Land Surveyor, registered in the State of Colorado.

The Consultant shall assign personnel for the duration of the Contract, unless otherwise approved by the Project Engineer.

The Consultant Assistant Project Engineer and Consultant Inspector(s) assigned to the project shall be competent in road and bridge construction and must be thoroughly familiar with CDOT's specifications, manuals, forms, and documentation requirements. The level of qualification provided shall be requested and approved by the CDOT Project Engineer. A copy of work experience and/or proof of Licensing shall be provided to the CDOT Project Engineer before work begins. Consultant personnel who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Project Engineer.

C. Project Staffing Authority

The Project Engineer is in direct charge of the work and is responsible for administration of the project contract as defined in the CDOT Standard Specifications and Standard Special Provisions, within the guideline of the Contract. The Project Engineer shall report directly to the Resident Engineer. This includes approving and setting work hours for project construction and the materials sampling, testing, and inspection, as outlined in the Project Specifications. Consultant personnel shall be on the project when the Contractor is working.

D. Submittal of Final Documentation

Final documentation shall be submitted to the CDOT Project Engineer within 20 working days after project acceptance. A completed CDOT Form 250 shall be submitted to the CDOT Project Engineer 10 working days after the Consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding Consultant payments received subsequent to project acceptance until this material is received.

E. Engineer's Certification

The Consultant Engineer, as specified in the Contract, shall certify in writing that all inspection, sampling, and testing activities conform to the plans, specifications, and purpose of the design. The Consultant Engineer shall be available to review work, resolve problems, and make decisions in a timely manner as requested by the CDOT. The CDOT Project Engineer shall be the final authority regarding acceptance of work not conforming to the plans and specifications.

Task 1.0 Construction Management Support

Provide CDOT Project Engineer with the following construction inspection support:

- 1.1 Traffic Control: Monitor the Contractor's implementation of traffic signing, barriers, and other traffic control measures.
- 1.2 Daily Quality Control Inspection & Quantity Control: Perform daily quality control inspections of construction activities to document activities performed and assessment of conformance with the contract documents in accordance with Section 2 of this Scope. Inspection items will include, but may not be limited to, rebar and concrete placement, paving, and traffic control installations.

Quantities of work elements constructed will be measured and recorded to support the preparation and processing of progress pay estimates to the Contractor.

Quantities will be documented in an interim quantity book for tracking of quantities constructed as compared to the original design quantities on the project. Consultant Project Engineer and Inspector shall assist CDOT in resolving disputes in quantities with the Contractor prior to the preparation of the pay estimate.

- 1.3 Project Documentation: Prepare and review Inspector's progress reports and complete appropriate CDOT paperwork and forms.
- 1.4 Contaminated Material Notification: Monitor construction operations and notify the Project Engineer and CDOT Resident Engineer immediately when contaminated material or otherwise unacceptable material is encountered or developed on the project.

Task 2.0 Post Construction Support

- 2.1 As-Constructed Drawings: Complete 11"x 17" as-constructed drawings of work completed by the Contractor, including final pay quantities.
- 2.2 Preparation of Final Pay Estimate: Assist in determining final pay quantities with appropriate supporting documentation and checks.

Task 3.0 Project Management

- 3.1 Progress Reports: Prepare weekly progress reports for the CDOT Project Engineer documenting project progress in accordance with the Basic Contract.
- 3.2 Certified Payroll: Review certified payroll documentation provided by the Contractor and conduct random interviews of Contractor employees to determine if the Contractor is in conformance with CDOT's EEO/Labor Compliance policies.

Deliverables generated during the project will include the following and will be submitted throughout the duration of the project, or at specific dates commensurate with the deliverable's intent:

- Weekly Progress Reports.
- Project diaries, inspection reports, quantity records, and other documentation prepared during the course of construction in accordance with CDOT requirements.

Section 2 – Assistant Project Engineer Requirements

General Work Description

Assistant Project Manager responsibilities may include, but are not limited to the following:

- ◆ Shall support CDOT's staff through management of the construction project
- ◆ Shall certify in writing that all inspection, materials, materials testing, and construction management conforms to the plans, specifications, and purpose of design.
- ◆ Preparing and transmitting updates of construction activities to the CDOT's Public Information Office
- ◆ Preparing routine correspondence to the Contractor, CDOT staff, local agencies, etc.

- ◆ All Inspector responsibilities as delineated below (Section 3)

The consultant shall furnish to the Project Engineer, the phone number, where the Project Engineer can reasonably expect to make contact promptly with the consultant at all times during the project unless otherwise approved by the Project Engineer.

Personnel Qualifications

The Assistant Project Manager/Inspector shall be permanently assigned to the project and shall be responsible for the administration of the CDOT construction contract. The Assistant Project Manager/Inspector shall have minimum of six (6) years of experience in related road and bridge construction and responsible for supervising the work of the project Inspectors. The Assistant Project Manager/Inspector shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. The Consultant's Assistant Project Engineer shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Project Engineer. SiteManager documentation procedures will apply. The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 3 – Inspector's Requirements

General Work Description

Inspection responsibilities may include, but are not limited to the following:

- ◆ Performing duties described in the CDOT *Inspector's Checklist*.
- ◆ Preparing and transmitting periodic reports and billings required by CDOT Procedural Directive 400.1
- ◆ Monitoring and documenting Contractor payroll compliance.
- ◆ Participating in weekly progress meetings with contractor, subs, utilities, and other interested parties.
- ◆ Securing project documentation from the Contractor.
- ◆ Anticipating project problems and suggesting recommended solutions to the Project Engineer.
- ◆ Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications. Informing and obtaining concurrence as needed from the Project Engineer and keep relevant documentation for project records.

- ◆ Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- ◆ Communicating with adjacent landowners to resolve issues that may arise due to construction, as required.
- ◆ Reviewing and approving the Contractor's Method of Handling Traffic (MHT).
- ◆ Monitoring compliance with and taking appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT) and the Manual of Uniform Traffic Control Devices (MUTCD).
- ◆ Providing initial, follow-up, and final inspections of work in progress including interim and final measurements and coordinating with the materials testers to ensure testing requirements are met.
- ◆ Notifying contractors and the Project Engineer of non-compliance with the contract plans and specifications in a timely manner.
- ◆ Performing special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT Inspection Program.
- ◆ Preparing inspection documentation for development of progress payments for the Contractor in accordance with prescribed procedures.
- ◆ Submitting standard documentation reports no later than the following working day.
- ◆ Providing liaison and communication to contractor field crews.
- ◆ Assisting in preparing the final "As-Constructed" plans upon project completion.
- ◆ Assisting in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.
- ◆ Assisting in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondences.

Personnel Qualifications

The Inspectors shall be permanently assigned to the project and shall perform all materials inspection and construction documentation as directed by the Project Engineer. The Inspectors performing inspection shall have successfully completed the CDOT Inspector Qualification Program, pursuant to CDOT Policy Memo 25 issued March 4, 2005. The Inspector(s) shall have a minimum of one (1) year experience in related road and bridge construction. The Inspector(s) shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist. References of inspection experience shall be available for all staff, and may be requested at any time during the Contract.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. Each of the Consultant's field inspectors shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Project Engineer. SiteManager documentation procedures will apply.

The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 4 – Testing Requirements

General Work Description

The consultant shall sample, test, inspect, and document all materials generated and produced on the project. This includes: materials delivered to the project that are listed in the Summary of Approximate Quantities in accordance with the SCHEDULE in the Field Materials Manual; materials that may be added to the project through contract modification; and altered material quantities whether increased or decreased;

Testing of materials that are specifically designated to be pre-inspected or pretested by this or any other Department of Transportation shall remain the responsibility of CDOT. The consultant shall document and transport samples of any and all materials to the CDOT Central Laboratory that are required to be tested by CDOT regardless of pre-inspection or pretesting responsibilities;

The consultant shall furnish the CDOT Project Engineer with copies of all worksheets on a daily basis. The consultant shall also keep the CDOT Form 626 up to date at all times and provide copies of this form to the CDOT Project Engineer and the contractor within 12 hours for any material found to be out of compliance with the specifications;

The consultant shall coordinate the schedule for Independent Assurance Tests for the project in accordance with CDOT Form 379, with the Residency Head Tester, or directly with the Region IAT person;

Final documentation shall be submitted to the CDOT Project Engineer within 20 working days after project acceptance. A completed CDOT Form 250 shall be submitted to the CDOT Project Engineer 10 days after the consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding any and all consultant payments.

Section 5 – Schedule Analysis Requirements

General Work Description

- ◆ Review the Contractor's accepted as-planned schedule, schedule updates, and method statements for compliance with contract requirements
- ◆ Assemble and review as-built data and develop a current as-built schedule
- ◆ Perform a schedule delay analysis and determine the amount of Contractor and/or CDOT excusable delays
- ◆ Prepare schedule reports and exhibits to assist in evaluation of schedule delays and remaining as-planned work
- ◆ Provide ongoing schedule review and evaluation support through project completion